UNIVERSITY OF Minnesota

DEPARTMENT OF BIOCHEMISTRY
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Thankyou very much. Joshua Lederberg

MAY 23 1969

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May 27, 1969

Professor Joshua Lederberg
Department of Genetics
Stanford University School of Medicine
300 Pasteur Drive
Palo Alto, California

Dear Professor Lederberg:

I transmit to you herewith, as your requested, reprints of some of our papers on fluoride metabolism. I hope that these will be of interest and of use to you.

With respect to your question of genetic variation, I can say that I know nothing on this score. There are, however, some differences in fluoride metabolism between species of animals. For example, a much higher relative intake of fluoride is required to produce mottled enamel in the rat than in the human. This is because the rat incisor tooth grows continually through life. Also the skeleton of the rat continues to grow virtually through the life of the animal.

Although there may very well be a special fluoride-binding protein in plasma, no one has yet defined it. The evidence at the moment is that the total fluoride of plasma exceeds by almost a half an order of magnitude the ionic fluoride of plasma. However, I am not yet certain that the non-ionized fluoride is directly combined with any bare plasma protein. This is a problem on which we are now working, but we have not yet obtained any clear or definitive evidence.

I had earlier seen your article on fluoridation. With respect to the point you mentioned in the next to the last paragraph, I can indicate that careful and thorough studies by Dr. Herta Spencer of the Hines Veterans Hospital have shown, with very wide variations of calcium intake, no appreciable difference in the amount of fluoride absorbed from the intestine in humans. Less than 10% of the fluoride intake, which was also varied, was present in the feces.

Yours sincerely,

W. D. Armstrong

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Professor and Head

WDA/bah

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